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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,169	06/19/2003	Dong Pil Park	DAE-0007	7167
7590 07/26/2006			EXAMINER	
CANTOR COLBURN LLP 55 Griffin Road South Bloomfield, CT 06002			LEWIS, BEN	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 07/26/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/600,169	<b>Applicant(s)</b> PARK, DONG PIL	
	<b>Examiner</b> Ben Lewis	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

**Detailed Action**

1. The Applicant's amendment filed on June 15<sup>th</sup>, 2006 was received. Claims 1 was amended. Claim 6-17 were cancelled.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action (issued on June 30<sup>th</sup>, 2006).

***Claim Rejections - 35 USC § 102***

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al. (U.S. Patent No. 6,329,101 B1)

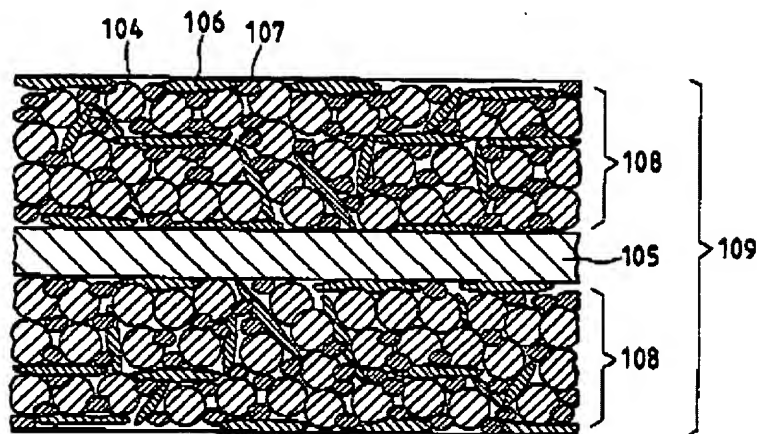
With respect to claim 1, Kawakami et al. teach a method for manufacturing a powdery material electrode member for a secondary cell wherein the hydrogen-storing compound powder obtained in Example 4 was mixed with 2 weight ratio of flake-like nickel coated graphite powder, 85 um in average particle size, 1 weight ratio of spherical nickel powder, 10 um in average particle size as the auxiliary conductive materials, and 3% by weight of polyvinyl alcohol on the compound powder basis under the addition of water to prepare a pasty mixture and the mixture was filled in a spongy nickel porous member "current collector" having a porosity of 95% and an average pore

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size of 150 um. After drying, the filled member was pressurized by using a roller press and cut to a predetermined size. To the cut member, a nickel lead wire was connected and an electrode member serving as the negative electrode of a secondary cell was obtained (Col 27 lines 55-67).

Regarding the collectors being combined at upper and lower edges, Kawakami et al teach that the electrode member (negative electrode) 109 of FIG. 2 is constructed so as to form active material layers 108 comprising the above-mentioned hydrogen-storing compound powder 104 shown in FIG. 1 on a collector 105. The electrode member 109 can be fabricated by mixing the hydrogen-storing compound powder 104 with auxiliary conductive material 106 and 107 of two different shapes or more such as flake and sphere to form active material layers 108 with the dry press or by adding a binding agent (not shown in FIG. 2) and a solvent to the mixture of the above (Col 10 lines 55-67). Therefore, the upper and lower edges of the collectors are combined to the active material.

*FIG. 2*



With respect to claim 2, Kawakami teach a that the above-mentioned hydrogen-storing (alloy) powder also comprises the transition metal oxide layer composed of one transition metal element or more selected from molybdenum, tungsten, vanadium, niobium, titanium, zirconium and iridium, and oxygen element formed outside the core layer for storing hydrogen and one transition metal or more selected from nickel, chromium, molybdenum, cobalt, copper, palladium, platinum, iron, ruthenium, rhodium, iridium, tungsten, titanium and manganese dispersed outside the transition metal oxide layer (Col 13 lines 14-25).

With respect to claim 3, Kawakami teach in Example 4 that the hydrogen-storing alloy of the above coated with lithium-contained tungsten-silicon oxide containing lithium element and having metallic nickel, cobalt and copper dispersed and carried on the outermost surface in a thickness of about 10 nm (Col 26 lines 35-56). The hydrogen-storing compound powder obtained in Example 4 was mixed was filled in a spongy nickel porous member "collector" having a porosity of 95% and an average pore size of 150 um (Col 27 lines 55-67).

With respect to claim 4, Kawakami teach that a group of electrodes were produced by winding the positive electrode obtained in Example 16 and the negative electrode obtained in Comparative Example 1 via an interposed separator in a cylindrical spiral shape (Col 34 lines 33-45). Therefore the collectors must be in strip form in order to be wound into a cylindrical spiral shape.

With respect to claim 5, Kawakami teaches that as the preparation of an electrode member electrode, e.g., having the structure shown in FIG. 2, by using a powdery material comprising the above hydrogen-storing compound, two roughly classified methods can be employed: one by adding an auxiliary conductive material to the powdery material and sintering the mixture on a collector or the other by having the powdery material bounded on a collector with a binding agent. As the above collector, a foamed metal obtained by coating the surface of a sheet-shaped polymer resin

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having a three dimensional network structure of foamed urethane or the like with a metal film of nickel or the like by the plating or other techniques and by the decomposing removal of the resin through firing, a foamed metal obtained by coating a felt of carbon fiber with a metal film of nickel or the like by the plating or other techniques, a non-woven cloth of a metal fiber such as nickel fiber, a sintered product of nickel fine powder, a punching metal or expanded metal of nickel or a nickel-plated perforated thin copper sheet, a nickel foil, a nickel-plated metal foil and such others are employed (Col 17 lines 11-35).

### ***Response to Arguments***

4. Applicant's arguments filed on June 15<sup>th</sup>, 2006 have been fully considered but they are not persuasive.

*Applicant's principle arguments are.*

*(a) Kawakami does not disclose perforating each of at least two collectors filling powders of metal hydride between the perforated collectors.*

*(b) Kawakami does not disclose compressing the collectors having the powders of the metal hydride filled therebetween, so that the powders of the metal hydride are contained in the collectors and the collectors are combined at upper and at lower edges thereof.*

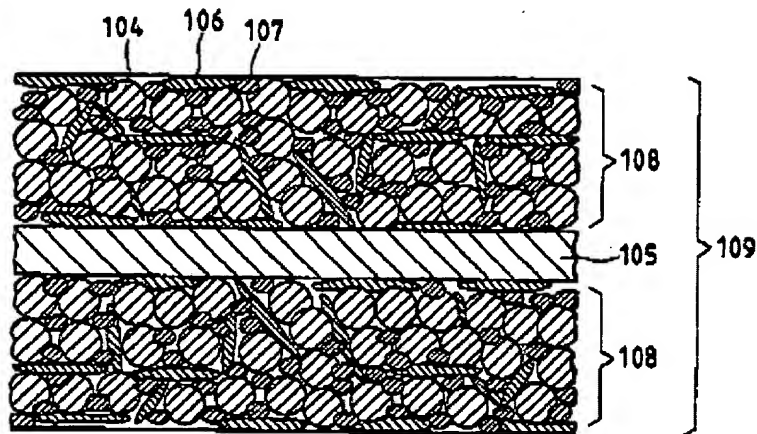
In response to Applicant's arguments, please consider the following comments.

(a) and (b) Kawakami et al. teach a method for manufacturing a powdery material electrode member for a secondary cell wherein the hydrogen-storing compound powder obtained in Example 4 was mixed with 2 weight ratio of flake-like nickel coated graphite powder, 85  $\mu\text{m}$  in average particle size, 1 weight ratio of spherical nickel powder, 10  $\mu\text{m}$  in average particle size as the auxiliary conductive materials, and 3% by weight of polyvinyl alcohol on the compound powder basis under the addition of water to prepare a pasty mixture and the mixture was filled in a spongy nickel porous member "current collector" having a porosity of 95% and an average pore size of 150  $\mu\text{m}$ . After drying, the filled member was pressurized by using a roller press and cut to a predetermined size. To the cut member, a nickel lead wire was connected and an electrode member serving as the negative electrode of a secondary cell was obtained (Col 27 lines 55-67).

Regarding the collectors being combined at upper and lower edges, Kawakami et al teach that the electrode member (negative electrode) 109 of FIG. 2 is constructed so as to form active material layers 108 comprising the above-mentioned hydrogen-storing compound powder 104 shown in FIG. 1 on a collector 105. The electrode member 109 can be fabricated by mixing the hydrogen-storing compound powder 104 with auxiliary conductive material 106 and 107 of two different shapes or more such as flake and sphere to form active material layers 108 with the dry press or by adding a binding agent (not shown in FIG. 2) and a solvent to the mixture of the above (Col 10 lines 55-67). Therefore, the upper and lower edges of the collectors are combined to the active material.



*FIG. 2*



**Conclusion**

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben Lewis whose telephone number is 571-272-6481. The examiner can normally be reached on 8:30am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Ben Lewis

Patent Examiner  
Art Unit 1745



**PATRICK JOSEPH RYAN**  
**SUPERVISORY PATENT EXAMINER**